

TK4830 Portable Tester for EV DC/AC Charging Station



1. Summary

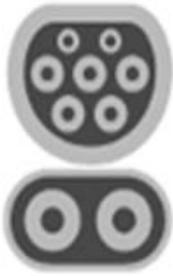
TK4830 is an AC and DC integrated charging station calibration device. The accuracy level of AC and DC power measurement of the device reaches Class 0.05. It can complete the working error and clock time error test of AC and DC charging stations.

The device supports European standard CCS2 DC charging interface, European standard Mennekes (Type2) AC charging interface and Japanese standard CHAdeMO DC charging interface. The device can use new energy vehicles as loads or use resistive loads to test. The equipment combines wide dynamic range measurement technology, ms-level high-speed refresh of electric energy and other technologies to achieve accurate measurement of accumulated electric energy throughout the charging process. Compared with the traditional steady-state measurement of preset calibration points, it more truly reflects the performance of charging station.

2. Reference Standards

- IEC 62196-2
- IEC 62196-3
- CHAdeMO
- JJG 1148–2022 *Calibration Regulations for AC chargers for Electric Vehicles*
- JJG 1149–2022 *Calibration Regulations for Off-board Chargers for Electric Vehicles*

3. Charging Interfaces



European Standard

CCS2



European Standard

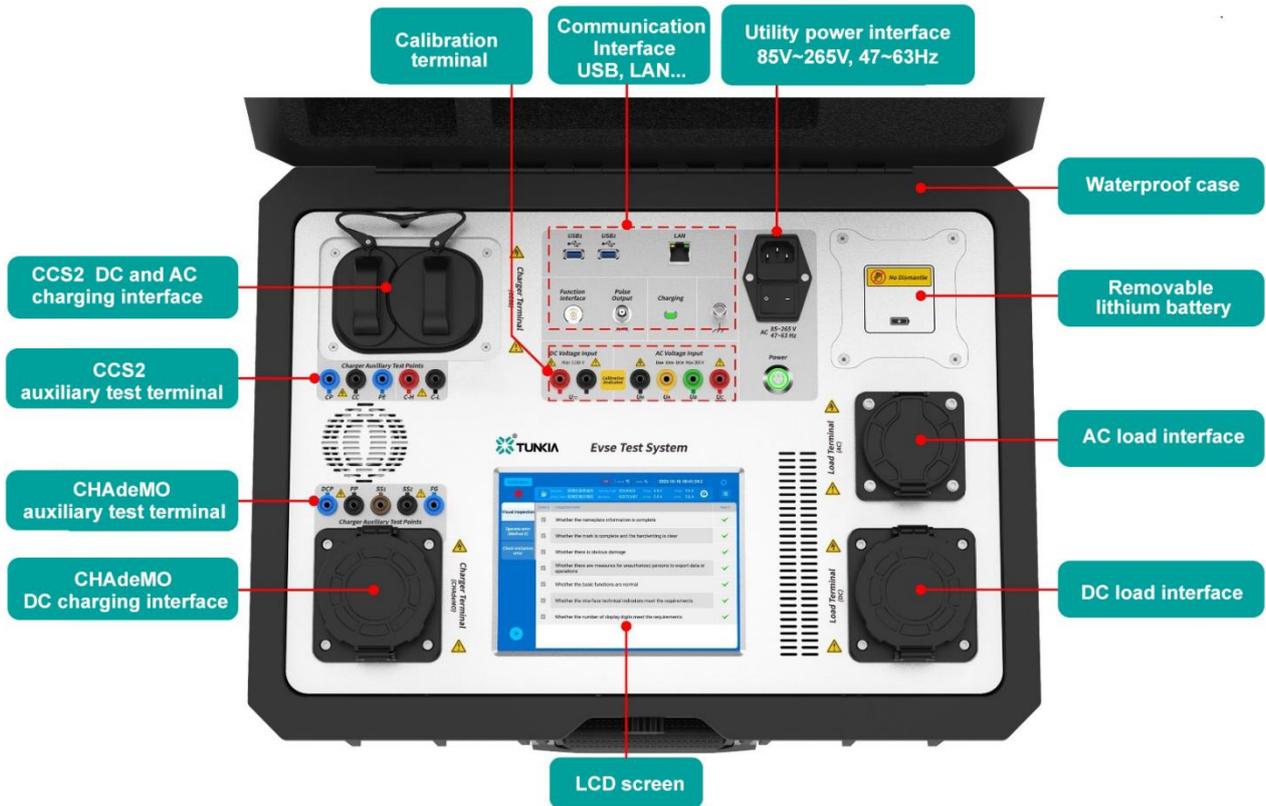
Mennekes (Type2)



Japanese Standard

CHAdeMO

4. Instrument Appearance



5. Features

- **DC Measurement:** DC voltage 100~1000V, DC current 1A~250A, DC power/electric energy class 0.05.
- **AC Measurement:** three-phase voltage 200V~480V, current 1A~72A, AC power/electric energy class 0.05.
- **Supports Multiple Loads:** new energy vehicles can be used as loads to measure the accumulated electric energy throughout the charging process, and traditional resistive loads can also be used for testing.
- **Flexible Load Matching:** DC load 20 kW, 60 kW optional, AC load single-phase 9 kW, three-phase 45 kW optional, and the load power can be switched by program control.
- **Load Cascading:** DC loads can be cascaded, up to four 60 kW loads can be cascaded, with a maximum power of 240 kW.
- **Wide Dynamic Range Measurement:** Avoid measurement risks caused by load fluctuations during the dynamic metering process of electric vehicle charging.
- **Ms-Level Power Refresh Speed:** Reduce errors introduced by charging station and standard instruments in the process of asynchronous accumulation of power, and improve the measurement accuracy of accumulated power.
- **Error Calculation:** Supports pulse method and accumulated electric energy method for working error verification.
- **Clock:** Real-time clock display to complete the clock time error test of the charging pile.
- **Temperature Probe:** Equipped with a wired temperature probe, which can complete on-site temperature measurement.
- **Automated Operation:** It can be operated through the device's LCD screen for automated testing, or it can be operated and tested through another tablet.
- **Traceable Calibration:** with dedicated calibration terminals to facilitate instrument calibration.
- **Three Power Supply Modes:** Charging gun head takes power, built-in lithium battery power supply and mains power supply. When used on site, the charging gun head can be used to draw power, without the need to connect to the mains separately. The lithium battery is removable for easy air transport.

6. Verification Ability

- Working Error:** The working error test can be completed in real time during the charging process through the pulse method or the accumulated electric energy method. It supports two methods of testing using new energy vehicles as loads or programmable resistive loads.



Test Method 1: Test with new energy vehicles as load



Test Method 2: Test with programmable resistive load as load

- Clock verification:** It has time verification function, real-time clock display, and clock time error test of the charger.

7. Specifications

DC Measurement Function			
DC Voltage	Measuring Range	200 V~1000 V	
	Measurement Uncertainty (k=2)	0.025%*RD	
DC Current	Measuring Range	1 A~250 A	
	Measurement Uncertainty (k=2)	$5 A \leq I \leq 250 A$	0.025%*RD
		$1 A \leq I < 5 A$	0.05%*RD
Power/Energy	Measurement Uncertainty (k=2)	$5 A \leq I \leq 250 A$	0.05%*RD
		$1 A \leq I < 5 A$	0.1%*RD
AC Measurement Function			
AC Voltage	Measuring Range	three-phase 200V~480V	
	Measurement Uncertainty (k=2)	0.025%*RD	
AC Current	Measuring Range	three-phase 0.1 A~80 A	
	Measurement Uncertainty (k=2)	0.025%*RD	
Power/Energy	Measurement Uncertainty (k=2)	0.05%*RD	
Clock Function			
Clock	Timing mode	GPS Clock timing	
	Time Error	≤1s	
Temperature Function			
Temperature	Measurement Range	-30°C~60°C	
	Maximum Permissible Error	0.5°C	
General Specifications			
Power Supply Mode	(1) Utility power: support 85V~265V, 47Hz~63Hz; (2) Charging gun head takes power (3) Removable built-in lithium battery		
Communication Interface	USB、LAN、Bluetooth or WiFi		
Temperature Performance	Operating temperature: -25°C~55°C; Storage temperature: -30°C~70°C		
Humidity Performance	Operating humidity: < 80% @ 30°C, < 70% @ 40°C. < 40% @ 50°C Storage humidity: <80% R·H, non-condensing		

8. Optional Accessories List

S/N	Pic	Name	Specifications	Note
1		TK4730-20kW Adjustable DC Resistance Load	<ul style="list-style-type: none"> Rated power: 20 kW @750V / 500V Voltage 0~750 V, Current 0~40 A Not cascadable Dimensions: 490 mm (width) x 200 mm (depth) x 453 mm (height) Weight: about 22kg 	Optional
2		TK4710-60kW-1000V Adjustable DC Resistance Load	<ul style="list-style-type: none"> Rated power: 60 kW @1000V/750V/500V Voltage 0~1000 V, Current 0~120 A Can be cascaded, supports up to 4 load cascades, maximum power 240kW Dimensions: 610 mm (width) x 550 mm (depth) x 435 mm (height) Weight: about 66 kg 	Optional
3		TK4720-9kW Adjustable AC Resistance Load	<ul style="list-style-type: none"> Rated power: single-phase 9 kW Voltage 0~264 V, Current 0~39.5 A Dimensions: 400mm (width) x 405mm(depth) x 345mm(height) Weight: about 20kg 	
4		TK4720-45kW Adjustable AC Resistance Load	<ul style="list-style-type: none"> Rated power: : three-phase 45 kW Voltage 0~264 V, Current 0~75 A Dimensions: 550mm(width) x 420mm(depth) x 590mm(height) Weight: about 54kg 	Optional